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PLAN OF ORGANIZATION

FOR THE

College Entrance Examination Board

OF THE

Middle States and Maryland

AND A

STATEMENT OF SUBJECTS

IN WHICH EXAMINATIONS ARE PROPOSED

1900

A. 166031

INTRODUCTORY STATEMENT

Conference in relation to A College Entrance Examination Board

At the meeting of the Association of Colleges and Preparatory Schools in the Middle States and Maryland, held at Trenton, N.J., December 2, 1899, the following resolutions were unanimously adopted:

Resolved, That this association urges the early establishment of a joint College Admission Examination Board, composed of representatives of colleges and of secondary schools in the Middle States and Maryland, which shall endeavor to bring about as rapidly as possible an agreement upon a uniform statement as to each subject required by two or more colleges for admission; to hold or cause to be held, at convenient points, in June of each year, a series of college admission examinations, with uniform tests in each subject, and issue certificates based upon the results of such examinations.

Resolved, That in case such a board be established before the next meeting of this association, the Executive Committee be empowered to designate the representatives of secondary schools to serve upon such a board until December, 1900.

Resolved, That the several colleges in the Middle States and Maryland be requested by this association to accept the certificates issued by such joint College Admission Examination Board, so far as they go, in lieu of their own separate admission examinations.

Resolved, That these resolutions be printed and the secretary instructed to forward a copy to the president or principal of each institution on the membership roll of this association.

In accordance with these resolutions the following call was issued December 14, 1899:

In view of the resolutions unanimously adopted at the meeting of the Association of Colleges and Preparatory Schools in the Middle States and Maryland, at their meeting held December 2, 1899, urging the early establishment of a joint College Admission Examination Board, an invitation is now extended to each college in the Middle States and Maryland having during the present year a freshman class (courses in arts and in sciences being counted together for this purpose) of not less than fifty members, to send a representative to a meeting to be held at Columbia University, on Friday, December 22, at 10 A.M., to undertake the establishment of such a Board.

It is hoped that the response to this invitation may be prompt and cordial, inasmuch as there is every reason to believe that public opinion is ready to welcome the step contemplated. It will be borne in mind that the resolutions referred to contemplate a Board on which the secondary schools shall have formal representatives, and in accordance with those resolutions it is the purpose to ask the Executive Committee of the Association of Colleges and Preparatory Schools in the Middle States and Maryland, to name the representatives of the secondary schools who are to serve upon the proposed Board for the first year of its existence. Respectfully,

CHARLES C. HARRISON,
Provost, University of Pennsylvania.

SETH LOW,
President, Columbia University.

A. V. V. RAYMOND,
President, Union University.

JACOB G. SCHURMAN,
President, Cornell University.

In response to this call, the following delegates met at Columbia University on December 22, 1899, at 10 A.M.: Prof. Butler

Columbia University; Dean Crawshaw, Colgate University; Prof. Lamberton, University of Pennsylvania; President Low, Columbia University; Chancellor McCracken, New York University; Dean Putnam, Barnard College; President Raymond, Union University; President Scott, Rutgers College; President Taylor, Vassar College; President Thomas, Bryn Mawr College; Dean Van Amringe, Columbia University; Dean Van Meter, Woman's College of Baltimore; Prof. West, Princeton University; Dean White, Cornell University; Mr. Farrand, Newark Academy; Dr. Goodwin, Mixed High School, New York; Dr. Sachs, Collegiate Institute, New York.

President Low was elected Chairman, and Mr. Farrand, Secretary.

The following is a summary of the action taken at the meeting:

It was voted that the Conference proceed to the organization of such a board as is described in the resolutions adopted at Trenton and in the call for this meeting, it being understood that every college shall be free to take part or not to take part in the administration of the Board so established, and to accept or not to accept the results of examinations as certified by such Board.

It was voted that the Board be known as the College Entrance Examination Board.

It was voted that in the judgment of the Conference the Board should consist of the executives, or their representatives, of the colleges concerned, and the representatives of the secondary schools to be appointed by the Association of Colleges and Preparatory Schools of the Middle States and Maryland.

It was voted that a Sub-Committee of five, consisting of three representatives of the colleges, and two of schools, be appointed by the Chairman to draft a constitution and rules for the College Entrance Examination Board, and to report at the next meeting of this Conference. It was further voted that the Chairman be requested to appoint Prof. Butler to serve as Chairman of the Sub-Committee.

It was voted that the Report of the Commitee of the National Educational Association on College Entrance Requirements be recommended to the Sub-Commitee as a guide in their deliber-

ations, and that the Committee be further recommended to secure by conference or otherwise, information concerning systems of examinations in this and other countries.

It was voted that the next meeting of the Conference be held at the call of President Low. After the reading and approval of the minutes the meeting adjourned.

The following Sub-Committee was appointed by President Low: Prof. Butler, Chairman; Prof. West, Prof. White, Dr. Goodwin, Mr. Farrand.

The Committee appointed in pursuance of the resolutions cited in the above memorandum, after full consideration, report a plan of organization for a College Entrance Examination Board and a Statement of Subjects in which examinations are proposed. The Committee recommend the adoption of the following resolution:

1. *Resolved*, that the Plan of Organization for a College Entrance Examination Board and the Statement of Subjects in which examinations are proposed, as recommended in the report of the Sub-Committee appointed December 22, 1899, be adopted by this Conference.

2. *Resolved*, that the Chairman of the Conference be instructed to transmit copies of the Plan of Organization to the several colleges invited to participate in this Conference, with the request that each College notify him as soon as practicable,

(*a*) Whether it will accept the Plan of Organization and appoint a representative to the College Entrance Examination Board; and

(*b*) Whether it will accept the certificates issued as the result of the examinations to be held by such Board, when constituted:

Respectfully submitted,

NICHOLAS MURRAY BUTLER,
ANDREW F. WEST,
HORATIO S. WHITE,
EDWARD J. GOODWIN,
WILSON FARRAND,
} Sub-Committee

May 12, 1900.

Plan of Organization and Constitution

In response to the request of the Association of Colleges and Preparatory Schools of the Middle States and Maryland, made in resolutions unanimously adopted at a meeting of the Association held at Trenton, N.J., on December 2, 1899, the several colleges and universities in the Middle States and Maryland, participating in this agreement, do agree, as follows:

1. There is hereby established a College Entrance Examination Board, to consist of the President, or his authorized representative, of each college or university in the Middle States and Maryland which has a freshman, or entering, class of not fewer than fifty students (courses in arts and in sciences to be reckoned together for this purpose), and of five representatives of secondary schools of the Middle States and Maryland, to be chosen annually by the Association of Colleges and Preparatory Schools, or in such manner as that Association shall direct.

2. This Board shall organize by the election of a Chairman, a Vice-Chairman, a Secretary and a Treasurer. The Secretary and the Treasurer need not be members of the Board.

3. The Board shall choose an executive committee to consist of five members, including at least one representative of the secondary schools, which shall have such powers and duties as the Board may, from time to time, determine.

4. This Board shall, as soon as possible, adopt and publish a statement of the ground which should be covered and of the aims which should be sought by secondary school teaching in each of the following subjects (and in such others as may be desirable), and a plan of examination suitable as a test for admission to college:

Botany, Chemistry, English, French, German, Greek, History, Latin, Mathematics, Physics, Zoölogy.

5. Not later than December of each academic year, this Board shall designate for each subject named in section 4, a college

teacher to act as chief examiner, and one additional college teacher and one secondary school teacher, to act as associate examiners, and shall fix their compensation. It shall be the duty of the examiners so appointed to prepare examination questions, or other appropriate tests, in the several subjects, to be used at the annual examinations to be held under the direction of the College Entrance Examination Board. When the several question papers, or other tests, have been agreed on by the respective groups of examiners, they shall be submitted to a Committee of Revision to consist of the chief examiners and the five representatives of the secondary schools upon the College Entrance Examination Board. The action of this Committee of Revision shall be final.

6. Not later than May of each academic year the Board shall appoint a staff of readers to inspect and give a rating to the answer-books, or other tests, offered at the examinations, and shall fix their compensation. Both college and secondary school teachers shall be eligible for such appointments.

7. The examination papers shall be transmitted, as soon as adopted by the Committee of Revision, to the Secretary of the College Entrance Examination Board, and shall be printed and distributed, under his direction, to such examination centers and in accordance with such regulations as the College Entrance Examination Board may from time to time determine.

8. The examinations shall be held at such times, in such places, and under such supervision as the College Entrance Examination Board, or its Executive Committee may, from year to year, determine.

9. Immediately on the completion of an examination the answer-books, or other records, shall be forwarded in sealed packages to the Secretary of the College Entrance Examination Board, who shall assign them for inspection and rating to such readers as the Board or its Executive Committee may have chosen. The answer-books and other records, together with the rating accorded them by the reader, shall be returned by him, within one week after their receipt, to the Secretary of the College Entrance Examination Board, who shall issue, over his signature, a certificate as to the name, residence, and age of the

candidate; the name of the school at which he had last been in attendance, or if privately taught, the name of his last teacher; the subjects in which he presented himself for examination; the rating accorded him in each subject; and the place and date of the examination.

10. Examination books which, on a scale of 100 would be rated between 90 and 100, shall be marked A, Passed with Distinction; those between 75 and 90 shall be marked B, Passed Creditably; between 60 and 75, C, Passed; between 50 and 60, D, Failed; below 50, E, Failed Badly. No book shall be finally marked D or E until it has been passed upon by two readers. No revision of any answer-book will be made after its rating has been determined. All books marked D or E shall be kept for two years. At any time within that period they will be sent, at the request of the candidate, to any college that he may designate.

11. At the time of presenting himself for examination each candidate shall pay a fee of $5 to the person in charge of the examination, and shall receive a receipt therefor. The amount of such fees together with a correct list of the candidates — their names, addresses, ages, and schools (or teachers) — shall be transmitted, together with the answer-books and other records, to the Secretary of the College Entrance Examination Board. who shall pay over the amount received in fees to the Treasurer.

12. Salaries, bills and other claims against the Board shall be paid by the Treasurer, on the warrant of the Chairman of the Executive Committee.

List of Subjects for Examination

Examinations will be held on five consecutive days during the fourth week of June, 1901, in the following subjects:

1. **English**
   - *a.* Reading and Practice.
   - *b.* Study and Practice.

2. **History**
   - *a.* Ancient History.
   - *b.* Mediæval and Modern History.
   - *c.* English History.
   - *d.* American History and Civil Government.

3. **Latin**
   - *a.* I. Latin Grammar.
     II. Latin Composition.
   - *b.* Cæsar — 4 books of the *Gallic War.*
   - *c.* Cicero — 6 orations.
   - *d.* Vergil — 6 books of the *Æneid.*
   - *e.* Cornelius Nepos — First 15 *Lives.*
   - *f.* Sallust — The *Catiline.*
   - *g.* Ovid — 2500 lines.
   - *h.* Vergil — *Eclogues* and *Georgics.*
   - *i.* Vergil — *Æneid,* Books VII–XII.
   - *k.* Cicero — *De Amicitia* and *De Senectute.*
   - *l.* Advanced Prose Composition.
   - *m.* Sight Translation.

4. **Greek**
   - *a.* I. Greek Grammar.
     II. Greek Composition.
   - *b.* Xenophon — 4 books of the *Anabasis.*
   - *c.* Homer — 3 books of the *Iliad.*
   - *d.* Homer — *Iliad,* Books VI, VII and VIII.

e. Herodotus — Selections from Book VII.
f. Advanced Prose Composition.
g. Sight Translation.

5. **French**
   a. Elementary.
   b. Intermediate.
6. **German**
   a. Elementary.
   b. Intermediate.
7. **Mathematics**
   a. Elementary Algebra. I. To Quadratics.
   II. Quadratics and beyond.
   b. Advanced Algebra.
   c. Plane Geometry.
   d. Solid Geometry.
   e. Plane Trigonometry.
8. **Physics**
9. **Chemistry**
10. **Botany**
11. **Zoölogy**

NOTE. — Examinations in such other subjects as may be desirable will be held when there is sufficient demand.

Definition of Requirements

1. ENGLISH

The requirement in English is that recommended by the Conference on Uniform Entrance Requirements in English

NOTE. — No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

a. READING. — A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple

questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number — perhaps ten or fifteen — set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. The candidate is expected to read intelligently all the books prescribed. He is expected not to know them minutely, but to have fresh in mind their most important parts. **In every case knowledge of the book will be regarded as less important than the ability to write good English.** In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

The books set for this part of the examination will be:

1901 and 1902: Shakespeare's *Merchant of Venice;* Pope's *Iliad*, Books I, VI, XXII, and XXIV; The *Sir Roger De Coverley Papers* in The Spectator; Goldsmith's *The Vicar of Wakefield;* Coleridge's *The Ancient Mariner;* Scott's *Ivanhoe;* Cooper's *The Last of the Mohicans;* Tennyson's *The Princess;* Lowell's *The Vision of Sir Launfal;* George Eliot's *Silas Marner.*

1903, 1904, 1905: Shakespeare's *The Merchant of Venice* and *Julius Cæsar;* The *Sir Roger De Coverley Papers* in The Spectator; Goldsmith's *The Vicar of Wakefield;* Coleridge's *The Ancient Mariner;* Scott's *Ivanhoe;* Carlyle's *Essay on Burns;* Tennyson's *The Princess;* Lowell's *The Vision of Sir Launfal;* George Eliot's *Silas Marner.*

b. Study and Practice. — This part of the examination presupposes the thorough study of each of the works named below. The examination will be upon subject-matter, form, and structure. In addition, the candidate may be required to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

The books set for this part of the examination will be:

1901 to 1905: Shakespeare's *Macbeth;* Milton's *Lycidas,*

Comus, *L'Allegro*, and *Il Penseroso;* Burke's *Speech on Conciliation with America;* Macaulay's *Essays on Milton and Addison.*

Either part of the examination may be taken separately.

Attention is called to the following recommendations of the Conference on Uniform Entrance Requirements in English:

1. That English be studied throughout the elementary and secondary school courses, and, when possible, for at least three periods a week during the four years of the high school course.

2. That the prescribed books be regarded as a basis for such wider courses of English study as the schools may arrange for themselves.

3. That, where careful instruction in idiomatic English translation is not given, supplementary work to secure an equivalent training in diction and in sentence-structure be offered throughout the high school course.

4. That a certain amount of outside reading, chiefly of poetry, fiction, biography, and history, be encouraged throughout the entire school course.

5. That definite instruction be given in the choice of words, in the structure of sentences and of paragraphs, and in the simple forms of narration, description, exposition, and argument. Such instruction should begin early in the high school course.

6. That systematic training in speaking and writing English be given throughout the entire school course. That, in the high school, subjects for composition be taken, partly from the prescribed books, and partly from the student's own thought and experience.

7. That each of the books prescribed for study be taught with reference to

a. The language, including the meaning of words and sentences, the important qualities of style, and the important allusions;

b. The plan of the work, i.e. its structure and method;

c. The place of the work in literary history, the circumstances of its production, and the life of its author.

That all details be studied, not as ends in themselves, but as means to a comprehension of the whole.

2. HISTORY

The requirement in History is based on the recommendations of the Committee of Seven of the American Historical Association

(*a*) Ancient history, with special reference to Greek and Roman history, and including also a short introductory study of the more ancient nations and the chief events of the early Middle Ages, down to the death of Charlemagne (814).

(*b*) Mediæval and modern European history, from the death of Charlemagne to the present time.

(*c*) English history.

(*d*) American history and civil government.

Each of the above topics is intended to represent one year of historical work wherein the study is given five times per week, or two years of historical work wherein the study is given three times per week. For the present, however, and until the schools have adjusted their courses to the recommendations of the committee, the requirements in English History and in American History may each be met by one year of work wherein the study is given three times per week. For the present also separate examinations will be held in Greek and in Roman History.

The examination in history will be so framed as to require comparison and the use of judgment on the pupil's part, rather than the mere use of memory. The examinations will presuppose the use of good text-books, collateral reading, and practice in written work. Geographical knowledge will be tested by requiring the location of places and movements on an outline map.

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3. LATIN

The following minimum requirements in Latin are selected in as close accordance with the recommendations of the American Philological Association as is practicable

a. I. LATIN GRAMMAR: The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verbs; structure of sentence in general, with

particular regard to relative and conditional sentences, indirect discourse and the subjunctive: so much prosody as relates to accent, versification in general, and dactylic hexameter.

II. LATIN COMPOSITION: Translation into Latin of detached sentences and very easy continuous prose based upon Cæsar and Cicero.

b. CÆSAR: Any four books of the *Gallic War*, preferably the first four.

c. CICERO: Any six orations from the following list, but preferably the first six mentioned: —

The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic.

d. VERGIL: The first six books of the *Æneid.*

Examinations will also be held in the following subjects, acceptable in whole or in part, at the discretion of colleges, as substitutes for parts of the regular minimum requirements detailed above, or as satisfying additional requirements of different colleges, or suitable for candidates seeking advanced standing:

e. CORNELIUS NEPOS: The first fifteen Lives (Miltiades, Themistocles, Aristides, Pausanias, Cimon, Lysander, Alcibiades, Thrasybulus, Conon, Dion, Iphicrates, Chabrias, Timotheus, Datames, Epaminondas).

f. SALLUST: *The Catiline.*

g. OVID: Twenty-five hundred lines from the *Metamorphoses.*

h. VERGIL: The *Eclogues* and *Georgics.*

i. VERGIL: The last six books of the *Æneid.*

k. CICERO: *De Amicitia* and *De Senectute.*

l. ADVANCED PROSE COMPOSITION, consisting of continuous prose of moderate difficulty based on Cicero.

m. SIGHT TRANSLATION, based exclusively on prose of no greater difficulty than the easier portions of Cicero's orations.

The following alternative courses of school study are recommended by the Committee of the American Philological Association.

FOUR-YEAR LATIN COURSE

(*Five periods weekly throughout the four years*)

FIRST YEAR

Latin lessons, accompanied from an early stage by the reading of very simple selections. Easy reading: twenty to thirty pages of consecutive text.

In all written exercises the long vowels should be marked, and in all oral exercises pains should be taken to make the pronunciation conform to the quantities.

The student should be trained from the beginning to grasp the meaning of the Latin before translating, and then to render into idiomatic English; and should be taught to read the Latin aloud with intelligent expression.

SECOND YEAR

Selections from Cæsar's *Gallic War* equivalent in amount to four or five books; selections from other prose writers, such as Nepos, may be taken as a substitute for an amount up to, but not exceeding, two books.

The equivalent of at least one period a week in prose composition based on Cæsar.

Reading aloud and translating, together with training in correct methods of apprehending the author's meaning, both prepared and unprepared passages being used as material. The memorizing of selected passages.

THIRD AND FOURTH YEARS

Sallust: *Catiline.*

Cicero: six to nine orations (including the *Manilian Law*).

Ovid: 500 to 1,500 verses.

Vergil: *Æneid;* six to nine books.

The equivalent of at least one period a week in prose composition based on Cicero.

The reading of Latin aloud. The memorizing of selected passages.

FIVE-YEAR LATIN COURSE

FIRST FORM

(*Five periods weekly throughout the five years*)

FIRST AND SECOND YEARS

The same as the first year of the four-year course.

THIRD YEAR

The same as the second year of the four-year course.

FOURTH AND FIFTH YEARS

The same as the third and fourth years of the four-year course.

FIVE-YEAR LATIN COURSE

SECOND FORM

(*Five periods weekly throughout the five years*)

FIRST YEAR

The same as the first year of the four-year course.

SECOND YEAR

The same as the second year of the four-year course.

THIRD AND FOURTH YEARS

The same as the third and fourth years of the four-year course.

FIFTH YEAR

Vergil: *Æneid;* completed.

Cicero: *De Senectute* and *De Amicitia;* selected *Letters.*

The equivalent of at least one period a week in prose composition based on Cicero.

The reading of Latin aloud. The memorizing of selected passages.

SIX-YEAR LATIN COURSE

(*Five periods weekly throughout the six years*)

FIRST AND SECOND YEARS

The same as the first year of the four-year course.

THIRD YEAR

The same as the second year of the four-year course.

FOURTH AND FIFTH YEARS

The same as the third and fourth years of the four-year course.

SIXTH YEAR

Vergil: *Æneid*, completed.

Cicero: *De Senectute* and *De Amicitia;* selected *Letters.*

The equivalent of at least one period a week in prose composition based on Cicero.

The reading of Latin aloud. The memorizing of selected passages.

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4. GREEK

The following minimum requirements in Greek are selected in as close accordance with the recommendations of the American Philological Association as is practicable

a. I. GREEK GRAMMAR: The topics for the examination in Greek grammar are similar to those detailed under Latin Grammar.

II. GREEK PROSE COMPOSITION: Consisting principally of detached sentences to test the candidate's knowledge of grammatical constructions.

The examination in grammar and prose composition will be based on the first two books of Xenophon's *Anabasis.*

b. XENOPHON: The first four books of the *Anabasis.*

c. HOMER: The first three books of the *Iliad* (omitting II, 494–end).

Examinations will also be held in the following subjects, acceptable in whole or in part at the discretion of colleges, as substitutes for parts of the regular minimum requirements detailed above, or as satisfying additional requirements of different colleges, or suitable for candidates seeking advanced standing:

d. HOMER: The sixth, seventh and eighth books of the *Iliad.*

e. HERODOTUS: Selections from the Book VII, sections 1–60 and 172–239.

f. ADVANCED PROSE COMPOSITION, consisting of continuous prose based on Xenophon and other Attic prose of similar difficulty.

g. SIGHT TRANSLATION, based on prose of no greater difficulty than Xenophon's *Anabasis.*

The following course of school study is recommended by the Committee of the American Philological Association.

THREE-YEAR GREEK COURSE

(*Five periods weekly throughout the three years*)

FIRST YEAR

First and second terms: Introductory lessons.

Third term: Xenophon's *Anabasis* (20 to 30 pages).
Practice in reading at sight and in writing Greek.
Systematic study of grammar begun.

SECOND YEAR

Xenophon's *Anabasis* (continued), either alone or with other Attic prose (75 to 120 pages).

Practice in reading at sight, systematic study of grammar, thorough grammatical review, and practice in writing Greek, both based on study of Books I and II of the *Anabasis.*

THIRD YEAR

Homer (2,500 to 4,000 lines); e.g., *Iliad,* I–III (omitting II 494–end), and VI–VIII.

Attic prose (33 to 40 pages), with practice in writing Greek; grammar; practice in reading at sight.

NOTE.—If preparation for an advanced examination in Greek composition is not desired, the course may be reduced by one lesson a week for the first year.

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5. FRENCH

The requirements in French follow the recommendations of the Committee of Twelve of the Modern Language Association

a. THE ELEMENTARY REQUIREMENT

THE AIM OF THE INSTRUCTION

At the end of the elementary course the pupil should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of everyday life, or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below.

THE WORK TO BE DONE

During the first year the work should comprise: (1) careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation.

During the second year the work should comprise: (1) the reading of from 250 to 400 pages of easy modern prose in the

form of stories, plays, or historical or biographical sketches; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Suitable texts for the second year are: About's *Le roi des montagnes*, Bruno's *Le tour de la France*, Daudet's easier short tales, La Bédollière's *La Mère Michel et son chat*, Erckmann-Chatrian's stories, Foa's *Contes biographiques* and *Le petit Robinson de Paris*, Foncin's *Le pays de France*, Labiche and Martin's *La poudre aux yeux* and *Le voyage de M. Perrichon*, Legouvé and Labiche's *La cigale chez les fourmis*, Malot's *Sans famille*, Mairet's *La tâche du petit Pierre*, Mérimée's *Colomba*, extracts from Michelet, Sarcey's *Le siège de Paris*, Verne's stories.

b. THE INTERMEDIATE REQUIREMENT

THE AIM OF THE INSTRUCTION

At the end of the intermediate course the pupil should be able to read at sight ordinary French prose or simple poetry, to translate into French a connected passage of English based on the text read, and to answer questions involving a more thorough knowledge of syntax than is expected in the elementary course.

THE WORK TO BE DONE

This should comprise the reading of from 400 to 600 pages of French of ordinary difficulty, a portion to be in the dramatic form; constant practice in giving French paraphrases, abstracts or reproductions from memory of selected portions of the matter read; the study of a grammar of moderate completeness; writing from dictation.

Suitable texts are: About's stories, Augier and Sandeau's *Le Gendre de M. Poirier*, Béranger's poems, Corneille's *Le Cid* and

Horace, Coppée's poems, Daudet's *La Belle-Nivernaise*, La Brète's *Mon oncle et mon curé*, Madame de Sévigné's letters, Hugo's *Hernani* and *La chute*, Labiche's plays, Loti's *Pêcheur d'Islande*, Mignet's historical writings, Molière's *L'avare* and *Le bourgeois gentilhomme*, Racine's *Athalie*, *Andromaque*, and *Esther*, George Sand's plays and stories, Sandeau's *Mademoiselle de la Seiglière*, Scribe's plays, Thierry's *Récits des temps mérovingiens*, Thiers's *L'expédition de Bonaparte en Égypte*, Vigny's *La canne de jonc*, Voltaire's historical writings.

An examination in Advanced French, in accordance with the recommendations of the Committee of Twelve, will be given when there is sufficient demand for it.

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6. GERMAN

The requirements in German follow the recommendations of the Committee of Twelve of the Modern Language Association

a. THE ELEMENTARY REQUIREMENT

THE AIM OF THE INSTRUCTION

At the end of the elementary course in German the pupil should be able to read at sight, and to translate, if called upon, by way of proving his ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and constructions, to put into German short English sentences taken from the language of everyday life or based upon the text given for translation, and to answer questions upon the rudiments of the grammar, as defined below.

THE WORK TO BE DONE

During the first year the work should comprise: (1) careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of everyday life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also

upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise: (1) the reading of from 150 to 200 pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read, and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

Stories suitable for the elementary course can be selected from the following list: Andersen's *Märchen* and *Bilderbuch ohne Bilder;* Arnold's *Fritz auf Ferien;* Baumbach's *Die Nonna* and *Der Schwiegersohn;* Gerstäcker's *Germelshausen;* Heyse's *L'Arrabbiata*, *Das Mädchen von Treppi*, and *Anfang und Ende;* Hillern's *Höher als die Kirche;* Jensen's *Die braune Erica;* Leander's *Träumereien*, and *Kleine Geschichten;* Seidel's *Märchen;* Stökl's *Unter dem Christbaum;* Storm's *Immensee* and *Geschichten aus der Tonne;* Zschokke's *Der zerbrochene Krug.*

Good plays adapted to the elementary course are much harder to find than good stories. Five-act plays are too long. They require more time than it is advisable to devote to any one text. Among shorter plays the best available are perhaps Benedix's *Der Prozess*, *Der Weiberfeind*, and *Günstige Vorzeichen;* Elz's *Er ist nicht eifersüchtig;* Wichert's *An der Majorsecke;* Wilhelmi's *Einer muss heiraten.* It is recommended, however, that not more than one of these plays be read. The

narrative style should predominate. A good selection of reading matter for the second year would be Andersen's *Märchen*, or *Bilderbuch*, or Leander's *Träumereien*, to the extent of say forty pages. After that such a story as *Das kalte Herz*, or *Der zerbrochene Krug;* then *Höher als die Kirche*, or *Immensee;* next a good story by Heyse, Baumbach, or Seidel: lastly *Der Prozess.*

b. THE INTERMEDIATE REQUIREMENT

THE AIM OF THE INSTRUCTION

At the end of the intermediate course the pupil should be able to read at sight German prose of ordinary difficulty, whether recent or classical; to put into German a connected passage of simple English, paraphrased from a given text in German; to answer any grammatical questions relating to usual forms and essential principles of the language, including syntax and word-formation, and to translate and explain (so far as explanation may be necessary) a passage of classical literature taken from some text previously studied.

THE WORK TO BE DONE

The work should comprise, in addition to the elementary course, the reading of about 400 pages of moderately difficult prose and poetry, with constant practice in giving, sometimes orally and sometimes in writing, paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of articles, cases, auxiliaries of all kinds, tenses and modes (with special reference to the infinitive and subjunctive), and likewise upon word-order and word-formation.

The intermediate course is supposed to be the elementary course, plus one year's work at the rate of not less than four recitations a week. Suitable reading matter for the third year can be selected from such works as the following: Ebner-Eschenbach's *Die Freiherren von Gemperlein;* Freytag's *Die Journalisten* and *Bilder aus der deutschen Vergangenheit* — for example, *Karl der Grosse*, *Aus den Kreuzzügen*, *Doktor Luther*, *Aus dem Staat Friedrichs des Grossen;* Fouqué's *Undine;* Gerstäcker's *Irr-*

fahrten; Goethe's *Hermann und Dorothea* and *Iphigenie;* Heine's poems and *Reisebilder;* Hoffmann's *Historische Erzählungen;* Lessing's *Minna von Barnhelm;* Meyer's *Gustav Adolfs Page;* Moser's *Der Bibliothekar;* Riehl's *Novellen* — for example, *Burg Neideck, Der Fluch der Schönheit, Der stumme Ratsherr, Das Spielmannkind;* Rosegger's *Waldheimat;* Schiller's *Der Neffe als Onkel, Der Geisterseher, Wilhelm Tell, Die Jungfrau von Orleans, Das Lied von der Glocke, Balladen;* Scheffel's *Der Trompeter von Säkkingen;* Uhland's poems; Wildenbruch's *Das edle Blut.*

An examination in Advanced German, in accordance with the recommendations of the Committee of Twelve, will be given when there is sufficient demand for it.

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7. MATHEMATICS

The subjects of examination, and the definitions of Elementary Algebra and Advanced Algebra, are those recommended by the committee of the National Educational Association.

The definitions of Plane Geometry, Solid Geometry and Plane Trigonometry have been determined, in accordance with the recommendations of the Committee of the National Educational Association, chiefly by the present requirements of several representative colleges.

a. Elementary Algebra

I. To Quadratics, including the four fundamental operations for rational algebraic expressions, factoring, highest common divisor, least common multiple, complex fractions, the solution of equations of the first degree containing one or more unknown quantities, radicals and fractional exponents.

II. Quadratics and beyond, including quadratic equations in one and two unknown quantities, ratio and proportion, the progressions, the elementary treatment of permutations and combinations, the binomial theorem for positive integral exponents and the use of logarithms.

b. **Advanced Algebra,** including the elementary treatment of infinite series, undetermined coefficients, the binomial theorem for fractional and negative exponents, the theory of logarithms, determinants, and the elements of the theory of equations.

c. **Plane Geometry,** including the solution of simple original exercises and numerical problems.

d. **Solid Geometry,** including properties of straight lines and planes, of diedral and polyhedral angles, of projections, of polyhedrons, including prisms, pyramids and the regular solids, of cylinders, cones and spheres, of spherical triangles and the measurement of surfaces and solids.

e. **Plane Trigonometry,** including the definitions and relations of the six trigonometrical functions as ratios, proof of important formulæ, theory of logarithms and use of tables, solution of right and oblique plane triangles.

In solid geometry, plane trigonometry and advanced algebra the schools should insist upon the same amount of work and aim at the same standard of scholarship as the best American colleges require in their courses in these subjects.

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8. PHYSICS

The requirement in Physics is based on the report of the Committee on Physics of the Science Department of the National Educational Association

It is recommended that the candidate's preparation in physics should include:

a. Individual laboratory work comprising at least thirty-five exercises selected from a list of sixty or more, not very different from the list given below.

b. Instruction by lecture-table demonstrations to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

c. The study of at least one standard text-book, supplemented by the use of many and varied numerical problems, "to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws in elementary physics."

FIRST PART

Mechanics and Hydrostatics

1. Weight of unit volume of a substance.
2. Lifting effect of water upon a body entirely immersed in it.
3. Specific gravity of a solid body that will sink in water.
4. Specific gravity of a block of wood by use of a sinker.
5. Weight of water displaced by a floating body.
6. Specific gravity by flotation method.
7. Specific gravity of a liquid; two methods.
8. The straight lever: first class.
9. Center of gravity and weight of a lever.
10. Levers of the second and third classes.
11. Force exerted at the fulcrum of a lever.
12. Errors of a spring balance.
13. Parallelogram of forces.
14. Friction between solid bodies (on a level).
15. Coefficient of friction (by sliding on incline).

Light

16. Use of photometer.
17. Images in a plane mirror.
18. Images formed by a convex cylindrical mirror.
19. Images formed by a concave cylindrical mirror.
20. Index of refraction of glass.
21. Index of refraction of water.
22. Focal length of a converging lens.
23. Conjugate foci of a lens.
24. Shape and size of a real image formed by a lens.
25. Virtual image formed by a lens.

SECOND PART

Mechanics

26. Breaking-strength of a wire.
27. Comparison of wires in breaking-tests.
28. Elasticity: stretching.
29. Elasticity: bending; effect of varying loads.
30. Elasticity: bending; effect of varying dimensions.
31. Elasticity: twisting.
32. Specific gravity of a liquid by balancing columns.
33. Compressibility of air: Boyle's law.
34. Density of air.
35. Four forces at right angles in one plane.
36. Comparison of masses by acceleration-test.
37. Action and reaction: elastic collision.
38. Elastic collision continued: inelastic collision.

Heat

39. Testing a mercury thermometer.
40. Linear expansion of a solid.
41. Increase of pressure of a gas heated at constant volume.
42. Increase of volume of a gas heated at constant pressure.
43. Specific heat of a solid.
44. Latent heat of melting.
45. Determination of the dew-point.
46. Latent heat of vaporization.

Sound

47. Velocity of sound.
48. Wave-length of sound.
49. Number of vibrations of a tuning-fork.

Electricity and Magnetism

50. Lines of force near a bar magnet.
51. Study of a single-fluid galvanic cell.
52. Study of a two-fluid galvanic cell.
53. Lines of force about a galvanoscope.

54. Resistance of wires by substitution: various lengths.

55. Resistance of wires by substitution: cross-section and multiple arc.

56. Resistance by Wheatstone's bridge: specific resistance of copper.

57. Temperature-coefficient of resistance in copper.

58. Battery resistance.

59. Putting together the parts of a telegraph key and sounder.

60. Putting together the parts of a small motor.

61. Putting together the parts of a small dynamo.

At the time of the examination the candidate must present a note-book in which he has recorded the steps and the results of his laboratory exercises, and this note-book must bear the endorsement of his teacher, certifying that the notes are a true record of the pupil's work. It should contain an index of the exercises which it describes. It is practicable for pupils to make the original record of their observations entirely presentable, so that copying will be unnecessary, and they should in general be required to do so. This note-book will be returned at any time within a year at the request of the candidate.

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9. CHEMISTRY

The requirement in Chemistry is based on the report of the Committee on Chemistry of the Science Department of the National Educational Association

The following outline includes only the indispensable things which must be studied in the class-room and laboratory. The material is, for the most part, common to all elementary text-books and laboratory manuals. Each book makes its own selection of facts beyond this which may be necessary for the illustration of the principles of the science. The order of presentation will naturally be determined by each teacher for himself.

OUTLINE: — The chief physical and chemical characteristics, the preparation and the recognition of the following elements and their chief compounds: *oxygen*, *hydrogen*, *carbon*, *nitrogen*,

chlorine, *bromine*, *iodine*, *fluorine*, *sulphur*, phosphorus, silicon, potassium, *sodium*, calcium, magnesium, *zinc*, copper, mercury, silver, aluminum, *lead*, tin, *iron*, manganese, chromium.

More detailed study should be confined to the italicized ELEMENTS (as such) and to a restricted list of compounds, such as: water, hydrochloric acid, carbon-monoxide, carbon-dioxide, nitric acid, ammonia, sulphur-dioxide, sulphuric acid, hydrogen-sulphide, sodium-hydroxide.

Attention should be given to the atmosphere (constitution and relation to animal and vegetable life), flames, acids, bases, salts, oxidation and reduction, crystallization, manufacturing processes, familiar substances (illuminating gas, explosives, baking powder, mortar, glass, metallurgy, steel, common alloys, porcelain, soap).

Combining proportions by weight and volume; calculations founded on these and Boyle's and Charles' laws; symbols and nomenclature (with careful avoidance of special stress, since these are non-essential); atomic theory, atomic weights and valency in a very elementary way; nascent state; natural group, ing of the elements; solution (solvents and solubility of gases-liquids and solids, saturation); ionization; mass action and equilibrium; strength (= activity) of acids and bases; conservation and dissipation of energy; chemical energy (very elementary); electrolysis. Chemical terms should be defined and explained, and the pupil should be able to illustrate and apply the ideas they embody. The theoretical topics are not intended to form separate subjects of study, but to be taught only so far as is necessary for the correlation and explanation of the experimental facts.

The facts should be given as examples from various classes, and not as isolated things. Thus, to speak of a "standard method of preparing hydrogen," whereby the action of zinc on hydrochloric acid is meant, shows narrow and infertile teaching. It should be shown that all acids are acted upon by a certain class of metals to produce hydrogen. Examples of both classes of metals should be given and the general principles derived. The reason for using zinc and hydrochloric acid in the laboratory can then be stated.

It is recommended that the candidate's preparation in chemistry should include:

a. Individual laboratory work comprising at least forty exercises selected from a list of sixty or more, not very different from the list given below.

b. Instruction by lecture-table demonstrations to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

c. The study of at least one standard text-book to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry.

List of Experiments

General

1. Composition of the atmosphere.

2. Dissociation of mercuric oxide, and study of resulting products.

3. Burning of magnesium, sodium and potassium in air, and of iron in oxygen, with study of resulting products.

4. Combination of substances produced in (3) with water, and study of results.

5. Burning of sulphur and phosphorus in air; study of products.

6. Combination of substances produced in (5) with water; study of products.

7. Treatment of substances resulting from (3) and (4) with hydrochloric acid, and examination of final products.

Laws of Gas Volumes and Vapor Tension

8. Boyle's Law.

9. Charles's Law.

10. Vapor tension as related to temperature.

Common Elements and Compounds

11. Preparation and study of oxygen.

12. Weight of a litre of oxygen under standard conditions.

13. Preparation of hydrogen by action of sodium on water. Careful study of by-product.

14. Preparation of hydrogen by zinc and acid. More thorough study of hydrogen in larger quantities; Study of by-product.

15. Weight of a litre of hydrogen under standard conditions. (Optional for best students only.)

16. Proportion by volume in which hydrogen and oxygen unite. (Lecture demonstration with eudiometer.)

17. Proportion by weight in which hydrogen and oxygen combine.

18. Study of boiling point, freezing point, action on litmus, and taste of substance produced by combining oxygen and hydrogen.

19. Electrolysis of water, resulting gases being accurately measured and tested.

20. Vapor density of water, conclusion as to formula for water. (Optional for best pupils.)

21. Study of sodium, potassium, lithium, strontium, calcium, and barium compounds. Detection of presence of these metals by flame test and by spectroscope.

22. Study of salts of cobalt, copper, nickel, manganese, chromium, iron. Tests for these metals and those mentioned in 21 in unknown mixtures.

23. Study of compounds of aluminum, magnesium and zinc. Tests for these in mixtures of 21 and 22.

24. Tests for silver, lead, and bismuth in unknown mixtures of 21, 22 and 23.

25. Tests for mercury and arsenic in unknown mixtures of 21, 22, 23 and 24.

26. Preparation and study of chlorine gas.

27. Weight of a litre of chlorine.

28. Combustion of chlorine in hydrogen.

29. Preparation of hydrochloric acid and study of properties.

30. Decomposition of hydrochloric acid gas by sodium amalgam, and conclusions as to percentage composition. Avogadro's law.

31. Preparation and study of at least three chlorides.

32. Preparation and study of bromine.

33. Preparation of at least three bromides.

34. Preparation and study of iodine.

35. Preparation of at least three iodides.

36. Comparative study of the chemism of chlorine, bromine and iodine by mutual displacement.

37. Study of hydrofluoric acid and fluorides.

38. Determination of the combining proportion of chlorine and zinc, and of the atomic weight of zinc.

39. Atomic weight of zinc from specific heat. Law of Dulong and Petit.

40. Atomic weight of silver by displacement of zinc.

41. Study of forms of sulphur.

42. Direct formation of sulphides.

43. Study of sulphurous oxide.

44. Preparation of sulphurous and sulphuric acids.

45. Preparation of at least two sulphites and two corresponding sulphates. Comparative study of these.

46. Decomposition of ammonium nitrate and study of nitrous oxide.

47. To determine the composition of nitrous oxide. Gay-Lussac's Law.

48. Preparation and study of nitric acid.

49. Preparation of three nitrates in three different ways.

50. Composition of gas formed by action of cold dilute nitric acid on copper.

51. Composition of gas formed by union of nitric oxide and oxygen.

52. Preparation of chromic anhydride, chromic acid and potassium chromate.

53. Changing potassium chromate to potassium bichromate and back again. Oxidation and reduction in solutions.

54. Chromium as an acid-forming and as a base-forming element. Preparation of chromium sulphate.

55. Preparation of ferrous and ferric salts.

Carbon and some Carbon Compounds

56. Product of burning charcoal. Tests.

57. Test for presence of carbon in wood, paper, kerosene, coal gas, alcohol.

58. Preparation of three carbonates.

59. Solubility of carbonates in the presence of carbon di-oxide.

60. Effect of heat on suspension of carbonates in solution.

61. Carbon di-oxide from fermentation.

62. Alcohol from fermentation.

63. Preparation of ether by alcohol and sulphuric acid.

64. Preparation of alkaline salts of fatty acids, or soap-making.

At the time of the examination the candidate must present a note-book in which he has recorded the steps and the results of his laboratory exercises, and this note-book must bear the endorsement of his teacher, certifying that the notes are a true record of the pupil's work. It should contain an index of the exercises which it describes. It is practicable for pupils to make the original record of their observations entirely presentable, so that copying will be unnecessary, and they should in general be required to do so. This note-book will be returned at any time within a year at the request of the candidate.

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10. BOTANY

The requirement in Botany is based on the report of the Committee on Botany of the Science Department of the National Educational Association

An outline of suggested courses is herewith appended, the first course being for a half year of work, the second course being added to the first for a whole year of work.

FIRST COURSE

1. The Great Plant Groups. — Before undertaking the study of plants in their relations, it will be necessary to give some general training in the recognition of great groups. In a few exercises the pupil may be taught to recognize, in a general way, algæ, fungi, liverworts, mosses, ferns, equisetums, club-

mosses, gymnosperms, monocotyledons, and dicotyledons. It should be understood that this preliminary training is not to develop much knowledge of the structures of these groups, but merely to enable the student to recognize them in laboratory and field work.

2. Life-Relations and Processes. —

(1) The foliage leaf as a light-related organ.

(*a*) This fact explaining its position, its form, the relation of leaves to each other.

(*b*) The structure: demonstrating epidermis, stomata, mesophyll, chloroplasts, veins.

(*c*) Functions: demonstrating photosynthesis, transpiration, respiration.

(*d*) Protection of mesophyll: palisade cells, cuticle, hairs, movements.

(*e*) These relations and functions in green plants without foliage leaves.

(2) The stem as the leaf-bearing organ.

(*a*) Stems bearing foliage leaves, the problem of foliage display being studied in connection with subterranean, prostrate, submerged, climbing, and erect stems.

(*b*) Demonstrations of movements of water and elaborated material, growth, heliotropism, etc.

(*c*) Compare stem structure of different types.

(*d*) Stems bearing scale leaves, being connected with protection, or storage, or vegetative propagation, prominent examples being the bud, the tuber, and the rootstock types.

(*e*) Stems bearing floral leaves, the flowers being studied as to pollination and seed dissemination, but not as to their extensive terminology.

(3) The root as an absorbing and hold-fast organ.

(*a*) Relations to soil, water, air, mechanical support.

(*b*) Demonstrations of absorption, geotropism, hydrotropism.

(*c*) Structure of roots.

(*d*) Absorption and grappling by plants without roots.

3. THE PLANT SOCIETIES. — This is a study of natural plant areas, such as forest, meadow, swamp, and is very desirable if practicable. It is recognized that in city schools, and in those with very large classes, the study of natural areas can form no large part of the formal training, but it may always be encouraged. The conditions of several plant societies, however, may be imitated in the school room, and many of the adaptations of plants observed.

(1) Water plants. — An aquarium stocked with characteristic water forms, a collection of marine seaweeds, and some swamp plants are things to be obtained by any school. The structures of such plants should be contrasted with those of plants living under different conditions.

(2) Drought plants. — Characteristic drought plants can be cultivated, and also the effect of drought conditions upon ordinary plants can be noted. The various methods of regulating transpiration and of storing water should be observed.

(3) Ordinary plants. — To contrast the plants growing in genial conditions with those growing in water or drought conditions is a fruitful subject of observation.

SECOND COURSE

PLANT STRUCTURES. — Such a course needs no outline. Types representing each great plant group should be selected and the essential structures observed, unessential details being passed over. Naturally the structures will fall under two physiological heads, the nutritive and the reproductive. In the selection of types the following groups should be represented: algæ, fungi, lichens, liverworts, mosses, ferns, horsetails, club-mosses, conifers, monocotyledons, and dicotyledons.

In connection with this course it would be well to continue some work in plant physiology, a number of simple experiments

being "set up" to illustrate the more important functions of the structure under observation.

Such a course also incidentally involves the fundamental classification of plants, which phase of the subject may be carried into greater detail in connection with the study of the monocotyledons and dicotyledons by teaching the use of the ordinary manuals of seed plants.

In connection with both of these courses special attention is called to the great importance of drawing as a means of securlng definite observation.

To obtain the best results the work, as herein outlined, should be done in one of the last two years of the secondary-school course.

It is recommended:

1. That botany be taught in a course occupying not less than one half year, and preferably one year, with at least four exercises a week.

2. That this course in botany include a large amount of individual laboratory work, supplemented by as much field work as possible, done by the pupil under the careful direction of a competent instructor, and recorded by the pupil in the form of careful drawing and descriptions in a permanent note-book.

3. That such laboratory work, including the keeping of the note-book, occupy approximately one half of the whole botany assignment, double periods of time being given to each laboratory exercise.

4. That the course also include instruction by text-book, informal lectures, and frequent quizzes, elucidating and enforcing the laboratory work, or dealing with matter not touched upon in that work, to the end that the pupil may gain a comprehensive and connected view of biological principles, as exemplified by plants, rather than merely a knowledge of a few disconnected facts.

The examination will be in two parts, corresponding to the courses outlined above. They may be taken separately.

At the time of the examination the candidate must present a note-book containing the notes and drawings he has made in the course of his laboratory work, and this note-book must bear the

endorsement of his teacher, certifying that the notes are a true record of the pupil's own observations and experiences. It should contain an index of subjects. It is practicable for pupils to make the original record of their observations entirely presentable, so that copying will be unnecessary, and they should in general be required to do so. This note-book will be returned at any time within a year at the request of the candidate.

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11. ZOÖLOGY

The details in regard to this subject will be announced later.

FORMS

(Form of Printed Label for Answer Books)

COLLEGE ENTRANCE EXAMINATION BOARD
MIDDLE STATES AND MARYLAND

Examination in _____

Name (in full) _____

Address _____

Age (in years and twelfths) _____

School last attended
(or name of last regular teacher) _____

Place of Examination _____

Date of Examination _____

(Form of Report to be sent by supervisor of examination to Secretary of College Entrance Examination Board)

COLLEGE ENTRANCE EXAMINATION BOARD
MIDDLE STATES AND MARYLAND

SIR:

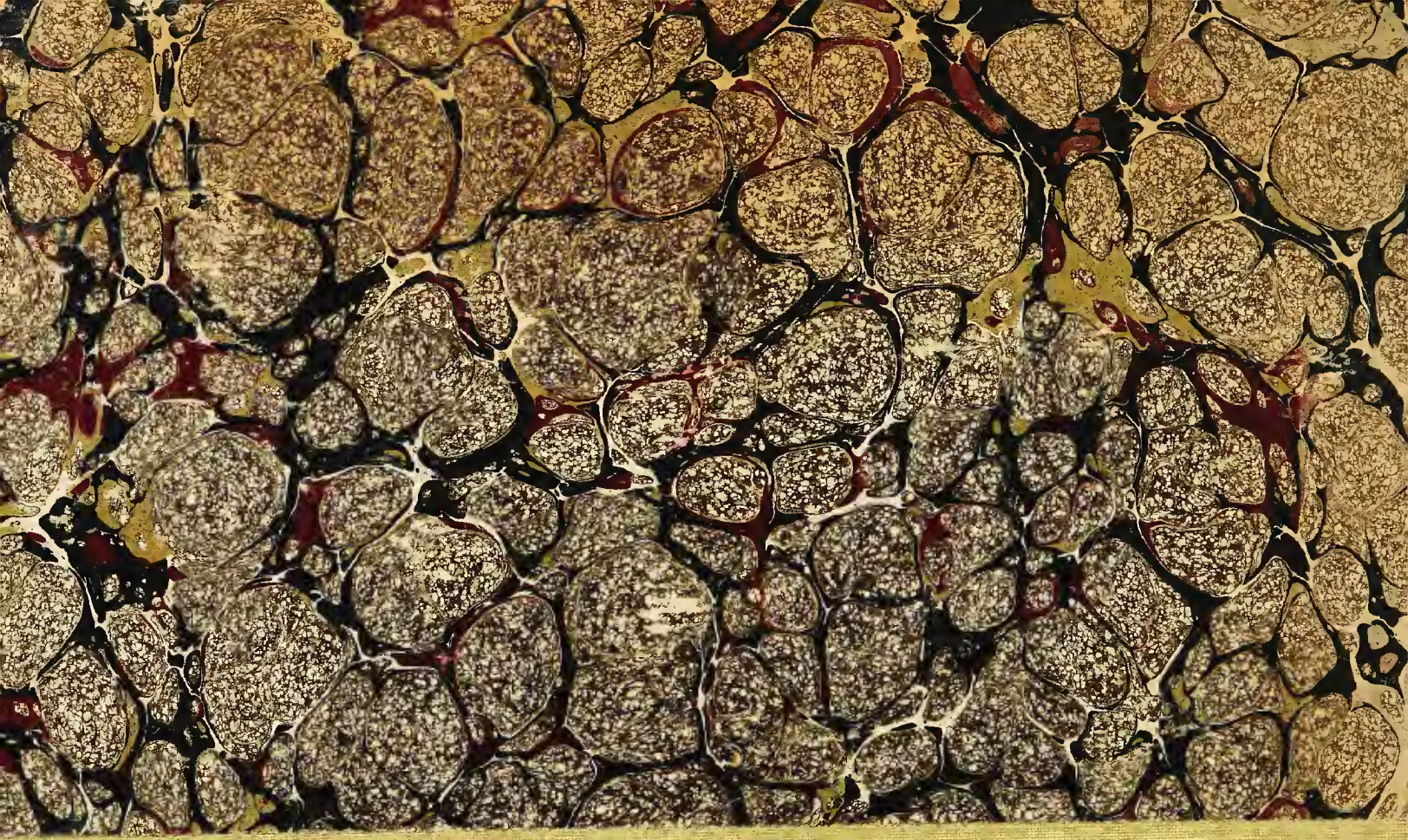
At examination held on _____, 19____, at _____ the following candidates offered themselves. Their answer-books and the amount of their fees at $5 each), _____, are transmitted herewith.

Name *Address* *Age* *School* *Subjects offered*

(Form of Certificate)

COLLEGE ENTRANCE EXAMINATION BOARD
MIDDLE STATES AND MARYLAND

This is to certify that at an examination held at_____
_____, on_____, 19__,
M_____,
of_____,
age_____years, a pupil of the_____school,
presented himself for examination in the following subjects, and has received the ratings entered below:

	Ratings
English	
a. Reading	
b. Study	
History	
a. I. Greek	
II. Roman	
b. Mediæval and Modern. . . .	
c. English	
d. American	
Latin	
a. I. Grammar . . .	
II. Composition . .	
b. Cæsar	
c. Cicero	
d. Vergil	
e. Nepos	
f. Sallust	
g. Ovid	
h. Vergil: *Eclogues* and *Georgics* .	
i. Vergil, *Aeneid*, VII–XII . . .	
k. Cicero: *De Amicitia* and *De Senectute*	
l. Advanced Composition	
m. Sight Translation .	
Greek	
a. I. Grammar . . .	
II. Composition . .	

	Ratings
Greek (*continued*)	
b. Xenophon	
c. Homer	
d. Homer, *Iliad*, VI–VIII . . .	
e. Herodotus	
f. Advanced Composition	
g. Sight Translation .	
French	
a. Elementary . . .	
b. Intermediate . . .	
German	
a. Elementary . . .	
b. Intermediate . . .	
Mathematics	
a. Elementary Algebra	
I. To Quadratics .	
II. Quadratics and beyond	
b. Advanced Algebra .	
c. Plane Geometry . .	
d. Solid Geometry . .	
e. Plane Trigonometry	
Physics	
Chemistry	
Botany	
a. First course . .	
b. Second course .	
Zoölogy